Record of Decision

Caspian Tern Management to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary

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Final Environmental Impact Statement

U.S. Fish and Wildlife Service
Migratory Birds and Habitat Programs
USDI, Fish and Wildlife Service
911 NE 11th Avenue
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RECORD OF DECISION: CASPIAN TERN MANAGEMENT TO REDUCE PREDATION OF JUVENILE SALMONIDS IN THE COLUMBIA RIVER ESTUARY

I. SUMMARY

This Record of Decision (ROD) was prepared by the U.S. Fish and Wildlife Service (Service) in compliance with the agency decision-making requirements of the National Environmental Policy Act of 1969, as amended (NEPA; 40 C.F.R. 1505.2). The purpose of this ROD is to document the Service's decision on the selection of the environmentally preferred management alternative from alternatives evaluated in the final Environmental Impact Statement (EIS) for *Caspian Tern Management to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary.* The EIS was prepared in cooperation with the U.S. Army Corps of Engineers (Corps) and NOAA Fisheries.

This ROD includes: (1) a background of the issue; (2) the Service's decision and implementation of the proposed action; (3) the basis for the Service's decision; (4) measures to avoid and minimize environmental harm (40 C.F.R. 1505.2); (5) a brief summary of alternatives considered, including the Environmentally Preferable Alternative; and (6) public involvement, including an explanation of changes made between the draft and final EIS (40 C.F.R. 1505.2(b) and 1505.2(a)).

Documents used in preparation of this ROD include the draft and final EIS for *Caspian Tern Management to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary* (U.S. Fish and Wildlife Service 2004 and 2005a, respectively); Service and Corps' ESA-consultations on the proposed action (U.S. Fish and Wildlife Service 2005b, 2005c); and Service and Corps' biological opinions on the proposed action (U.S. Fish and Wildlife Service 2005d, NOAA Fisheries 2006). All of these documents are incorporated by reference as described in 40 CFR 1508.13.

II. BACKGROUND

Increases in the number of Caspian terns (*Hydroprogne caspia*) nesting in the Columbia River estuary led to significant concerns over their potential impact on the recovery of threatened and endangered Columbia River salmonids (salmon and steelhead). The EIS analysis and this ROD are requirements of a Settlement Agreement (see below) to address long-term management of terns in the Columbia River estuary.

In 1999, NOAA Fisheries issued a biological opinion requiring the Corps to eliminate Caspian tern nesting from Rice Island (located in the upper estuary) in an attempt to decrease the number of juvenile salmonids eaten by terns (NOAA Fisheries 1999). In the same year, the Corps initiated a pilot project to relocate the Rice Island tern colony to East Sand Island, near the mouth of the estuary, where marine fish (i.e., non-salmon) were abundantly available to foraging terns (U.S. Army Corps of Engineers 1999). In 2000, the

Corps proposed to complete the relocation effort to prevent all Caspian tern nesting on Rice Island while attracting terns to nest on East Sand Island (U.S. Army Corps of Engineers 2000). The Service issued a Migratory Bird Treaty Act (MBTA) permit authorizing the potential take of tern eggs as part of this proposal to aid in the prevention of tern nesting on Rice Island.

As a result of the proposed actions in 2000, Seattle Audubon, National Audubon, American Bird Conservancy, and Defenders of Wildlife filed a lawsuit against the Corps and Service. The four groups alleged in the suit that compliance with NEPA was not sufficient for the proposed action of relocating terns from Rice Island to East Sand Island. Furthermore, the groups objected to the Service's issuance of the MBTA permit authorizing the potential take of tern eggs on Rice Island. The plaintiffs prevailed in their lawsuit before the United States District Court, Western District, and an injunction was granted on August 7, 2001.

In 2002, all parties reached a Settlement Agreement. Terms of the agreement required the Service (lead agency), Corps, and NOAA Fisheries prepare an EIS addressing long-term management of terns in the Columbia River estuary. Interim management measures were provided in the 2002 Settlement Agreement to allow habitat management and research activities in the Columbia River estuary to continue. The 2002 Settlement Agreement also required the Service and NOAA Fisheries to develop and publish three technical reports. The reports published were: (1) Status Assessment and Conservation Recommendations for the Caspian Tern in North America (Shuford and Craig 2002), (2) Caspian Tern Predation on Salmon and Steelhead Smolts in the Columbia River Estuary (NOAA Fisheries 2002), and (3) A Review of Caspian Tern Nesting Habitat: A Feasibility Assessment of Management Opportunities in the U.S. Fish and Wildlife Service Pacific Region (Seto et al. 2003).

III. DECISION

Based on the evaluation and comparison of alternatives and associated environmental consequences as provided in the final EIS, Alternative C: Redistribution of East Sand Island Tern Colony was identified as the environmentally preferred alternative. I have decided to select a modified version of Alternative C based on review of the NOAA Fisheries biological opinion and concerns regarding the potential magnitude of tern predation on Puget Sound Chinook and Hood Canal summer-run chum salmon. The modification, which is a component analyzed in the No Action Alternative (Alternative A) of the draft and final EIS, is the removal of the Dungeness National Wildlife Refuge (NWR), Washington management site from the proposed action and thus, a smaller reduction of tern nesting habitat on East Sand Island. As requested by NOAA Fisheries, the ESA-consultation process was not initiated until a Preferred Alternative was identified in the final EIS. NOAA Fisheries' concerns described above, prompted me to modify Alternative C to include a portion of Alternative A. There are no other differences in the selected alternative (modified Alternative C) as compared to Alternative C. The environmental consequences for modified Alternative C remain the same as Alternative C, except for effects to salmonids in waters surrounding Dungeness NWR and in the

Columbia River estuary. There will be no effects to salmonids in waters surrounding Dungeness NWR in modified Alternative C (as described in Alternative A). However, since a larger size of tern nesting habitat would remain on East Sand Island, and thus, potentially a larger number of nesting terns, there could be slightly higher salmonid predation levels than that analyzed in Alternative C but lower than that described in Alternative A. The overall impact to salmonids in the region remains the same for the scope of the project. Adaptive management will be implemented throughout the project. Monitoring and adapting management actions will be implemented as necessary dependent upon how salmonids and terns respond to implementation of the selected alternative.

Key components of the modified Alternative C include:

- Create new or enhance tern nesting habitat in Oregon and California to ensure a suitable network of sites is available for nesting terns on a regional scale. This should encourage the redistribution of a portion of the Caspian tern colony on East Sand Island into these areas. A total of approximately 7 acres of habitat will be managed for nesting terns (creation or enhancement) at Summer, Crump, and Fern Ridge lakes, Oregon; and San Francisco Bay (Brooks Island, Hayward Regional Shoreline, and Don Edwards NWR), California.

- The current 6-acre tern nesting site on East Sand Island will gradually be reduced as tern nesting habitat is created or enhanced at alternative regional locations. The tern nesting site on East Sand Island will be reduced to 1.5 to 2 acres. Habitat enhancement in the region and reduction in habitat on East Sand Island would be phased in at a 2:1 ratio.

- The Service will issue a Depredation Permit to the Corps, under the authority of the Migratory Bird Treaty Act (1918, as amended) and its regulations, for the collection of Caspian tern eggs at the upper estuary islands in the Columbia River (e.g., Rice Island, Miller Sands Spit, and Pillar Rock Island) if early season hazing activities fail to prevent terns from nesting at these locations. To date, hazing actions have been sufficient to discourage tern nesting at these upper estuary islands. As described in the final EIS, this permit would assist in preventing the establishment of new tern colonies in the upper estuary where tern predation on juvenile salmonids is known to be high.

- The Service will also implement a regional tern population monitoring program upon initial implementation of the ROD through 3 years after the specified habitat acreage (1.5 to 2 acres) has been attained on East Sand Island.

Modified Alternative C will be implemented with the following conditions:

- Modified Alternative C will be primarily implemented by the Corps with support from the Service. The Corps will issue a separate ROD declaring how they will implement the selected alternative.

- Specific implementation responsibilities of the Service include issuance of Migratory Bird Treaty Act permits and a regional tern population monitoring program, as described above.

- Management of the Caspian tern colony in the Columbia River estuary is identified as an element of the proposed action in the Final Updated Proposed Action for the Federal Columbia River Power System Biological Opinion (November 2004-under remand). Implementation responsibilities for East Sand Island will be held by the Corps.

- Anticipated timeframe for completion of the selected alternative is 2010 - 2015.

- Implementation of the selected alternative is dependent upon available funding and/or authority for each agency involved.

- Adaptive management would be undertaken such that tern nesting habitat acreage on East Sand Island could be reduced to 1 to 1.5 acres (as described in Alternative C) if alternative site(s) are identified in the future. The criteria for alternative site selection are described in Appendix G of the final EIS. If a new site that has not already been analyzed in the draft and final EIS is identified in the future, a site specific NEPA document would be prepared for that site. Any permitting associated with management of that site would be included in that effort.

IV. ALTERNATIVES CONSIDERED

The draft and final EIS evaluated a status-quo (no action) alternative, two action alternatives, and a no management alternative. The no management alternative was required for analysis under the Settlement Agreement.

Alternative A – No Action (Current Management Program)

The "No Action" alternative assumes no change from the current management program on East Sand Island and is the baseline from which to compare the other alternatives. Under this alternative, 6 acres of nesting habitat would be prepared annually for Caspian terns on East Sand Island.

Alternative B - No Management

Under this alternative, no management actions would occur on East Sand Island. The current tern nesting habitat on East Sand Island would most likely become fully vegetated within three years and unsuitable for tern nesting.

Modified Alternative C - Redistribution of East Sand Island Tern Colony - Preferred Alternative

The modified Alternative C, the Preferred Alternative, would reduce tern predation on juvenile salmonids in the Columbia River estuary by managing habitat to redistribute the

tern colony on East Sand Island throughout the Pacific Coast/Western region. Initially, this redistribution would have been achieved by creating new or enhanced tern nesting habitat in Washington, Oregon, and California while reducing the tern nesting site on East Sand Island to 1 to 1.5 acres. In response to NOAA Fisheries' concerns to ESA-listed salmonids in Washington, the original Alternative C described in the draft and final EIS was modified by removing the Dungeness NWR management site from the proposed action. As described in the final EIS, we proposed to replace twice the amount of nesting habitat that would be lost on East Sand Island to ensure a suitable network of sites is available for nesting terns on a regional scale. Thus, as a result of removing the Dungeness NWR site from the proposed action, the target acreage for the tern nesting site on East Sand Island would be higher (1.5 to 2 acres instead of 1 to 1.5 acres) than that described in the final EIS.

Habitat enhancement in the region and reduction in habitat on East Sand Island would be phased in at a 2:1 ratio. Thus, the current 6-acre tern nesting site on East Sand Island will gradually be reduced as tern nesting habitat is created or enhanced elsewhere in the region. The modified Alternative C includes approximately 7 (instead of the initial 8) acres of managed habitat that will be enhanced in Oregon and California. The six management sites in this alternative include Summer, Crump, and Fern Ridge lakes, Oregon; and San Francisco Bay (3 sites), California. Adaptive management would be undertaken such that tern nesting habitat on East Sand Island could be reduced to 1 to 1.5 acres as described in the original Alternative C if in the future, terns initiate nesting on a suitable site(s) (as described in Appendix G in the final EIS) and appropriate permit and NEPA compliance are met.

Alternative D - Redistribution and Lethal Control of East Sand Island Tern Colony

Similar to the original Alternative C, tern nesting habitat and colony size on East Sand Island proposed in this alternative would be reduced to decrease tern predation on juvenile salmonids and encourage redistribution of the large concentrated tern colony to other nesting sites within the Pacific Coast region. Approximately 8 acres from sites within the Pacific Coast region would be managed as potential Caspian tern nesting sites to replace the habitat lost on East Sand Island to ensure a network of suitable nesting habitat is available to displaced terns. Reduction in tern nesting habitat on East Sand Island would be phased in as habitat at alternate sites is developed at a 2:1 ratio (see description in Alternative C).

Unlike Alternative C, if development of potential nesting habitat elsewhere in the region and subsequent habitat reduction on East Sand Island is not sufficient to reduce the colony size by 2008, a lethal control program would be used in conjunction with these measures to achieve the proposed range of nesting terns (approximately 2,500 to 3,125 pairs in the estuary). The lethal control program would kill up to 50 percent of breeding adult terns each year beginning in 2008. Methods for killing adults could consist of euthanasia of terns after capturing them with a rocket net and use of shotguns to remove individual terns. The actual number of terns that would be killed under this alternative would depend on the success of redistributing a majority of the colony to other sites in the region. If the entire

colony nested in the smaller acreage that would remain on East Sand Island, a substantial number of terns would need to be killed. If the colony was partially reduced through habitat reduction, a lower number of terns would be killed (see Chapter 4, section 4.2.1.4 of the final EIS for projections of the number of terns that would need to be killed under a lethal control program).

Environmentally Preferred Alternative

The modified Alternative C was identified as the Environmentally Preferred Alternative. This alternative is most likely to result in the greatest overall (net) environmental benefits to both ESA-listed Columbia River salmonids and the regional Caspian tern population. Although Alternative A retains the risk of a catastrophic event potentially affecting the East Sand Island tern colony, it would primarily result in a benefit to Caspian terns because the current nesting colony on East Sand Island would not be disturbed and 6 acres of nesting habitat would be annually maintained. However, it would also result in the least benefit to ESA-listed Columbia River salmonids. Conversely, Alternative B would result in the highest benefit to ESA-listed Columbia River salmonids with the least benefit to Caspian terns. Alternative D could result in annual lethal removal of terns, potentially negatively affecting the regional tern population. Thus, a modified Alternative C is the alternative that would most likely achieve the project purposes of reducing tern predation on ESA-listed Columbia River salmonids while ensuring the long-term conservation of Caspian terns by redistributing the concentrated colony throughout the region.

V. RATIONALE FOR DECISION

The Service made the decision to implement the modified Selected Alternative based on review and consideration of impacts identified in the final EIS; public comments received throughout the process; and the alternatives' ability to meet the action purpose, comply with the Federal Endangered Species Act and Migratory Bird Treaty Act, assist in recovery of listed species, and address key issues.

Ability to Meet Purpose

Completion of this EIS and ROD in accordance with the 2002 Settlement Agreement has resulted in a Caspian Tern management plan (Alternative C, with modifications) that will reduce "resource management conflicts with listed salmonids while ensuring the conservation of terns in the Pacific Coast/Western region," as described in the Purpose of and Need for Action section in the final EIS.

The proposed habitat acreage on East Sand Island (1.5 to 2 acres) identified in modified Alternative C is selected to reduce tern predation in the Columbia River estuary on juvenile salmonids to a level that would increase salmonid population growth rates. NOAA Fisheries conducted an analysis using a life cycle model and tern predation rates to estimate the impact of tern predation on the population growth rate of various Evolutionary Significant Units (ESUs) of Columbia River Basin steelhead. Steelhead were the focus of this analysis because they are the ESUs most affected by tern predation in the Columbia

River estuary. Thus, estimates of the potential benefits to reducing tern predation are the greatest for steelhead but other Columbia River salmonid ESUs subject to tern predation would likely also benefit.

NOAA Fisheries identified an increase in population growth rate of one percent or greater as an objective with respect to management of Caspian terns in the estuary. The NOAA Fisheries analysis estimated that a reduction in the tern colony to approximately 3,125 nesting pairs could result in a one percent or greater increase in population growth rate for four of five Columbia River Basin steelhead ESUs; the increase for Upper Willamette River steelhead was not calculated. Because of uncertainties in the model, a more conservative range of nesting pairs (approximately 2,500 to 3,125) on East Sand Island was identified for Alternative C to provide greater certainty of an increase in population growth rate for all Columbia River Basin steelhead ESUs. However, because of NOAA Fisheries' concerns for Puget Sound Chinook and Hood Canal summer-run chum salmon, the proposed Dungeness NWR, Washington alternate site was removed from the proposed action. Since a smaller amount of alternative habitat would be enhanced or created elsewhere in the region, a larger amount of acreage and thus, number of terns would remain on East Sand Island (approximately 3,125 to 4,375 pairs, using an average nesting density of 0.55 pairs/square meters). Thus, the potential increase in population growth rate for one of the steelhead ESUs (Lower Columbia River ESU) in the NOAA Fisheries analysis may not reach one percent if the tern colony size reached its' upper limit (4,375 pairs). However, adaptive management would be undertaken such that tern nesting habitat on East Sand Island could be reduced to 1 to 1.5 acres as described in the original Alternative C if in the future, terns initiate nesting on a suitable site(s) (as described in Appendix G of the final EIS) and permit and NEPA compliance are met.

Compliance with the Federal Endangered Species Act

The Service and Corps have completed consultation under Section 7 of the Federal Endangered Species Act (ESA) with the Service and NOAA Fisheries addressing potential effects to those listed species that may be affected by the Selected Alternative (modified Alternative C). As a result of these formal and informal consultations, it was determined that the impacts from the Selected Alternative were not likely to jeopardize the continued existence of any listed species or to destroy or adversely modify associated designated critical habitat.

Promoting Recovery of Listed Species

Modified Alternative C best meets ESA statutory criteria for promoting recovery of endangered and threatened species in their natural ecosystems. The Service seeks to assist in the recovery of multiple ESA-listed salmonids that inhabit the Columbia River Basin: Lower Columbia River steelhead, Middle Columbia River steelhead, Upper Columbia River steelhead, and Snake River steelhead. Other ESA-listed salmonid stocks in the Columbia River would also benefit from the proposed action.

Key Issues Identified

The following issues were identified during public scoping and evaluated and analyzed in the EIS.

1. Concerns that the analysis of tern predation on salmonids needed to be more rigorous and should use peer-reviewed science in evaluating the effects of tern predation on the recovery of ESA-listed Columbia River salmonids.

   To address this issue, NOAA Fisheries completed a second analysis of the effects of tern predation on four Columbia River steelhead ESUs. This analysis is an appendix in the final EIS and supported the development of management alternatives and associated effects analysis. The NOAA Fisheries analysis was submitted to the Recovery Science Review Panel for a peer review in early 2004 to ensure that the analysis was more rigorous and based on peer-reviewed science as compared to the first predation analysis report completed by NOAA Fisheries in 2002.

2. Concerns for declining salmonids in the Columbia River.

   Three of the four alternatives analyzed in the final EIS (including modified Alternative C) provide management actions expected to result in benefits to Columbia River steelhead. NOAA Fisheries determined that while other salmonids are eaten by terns, steelhead appear to be most affected by tern predation. Based on the NOAA Fisheries predation analysis (NOAA Fisheries 2004), population growth rate increases for four Columbia River steelhead ESUs could occur within one generation (4 to 5 years) after the specified tern habitat acreage on East Sand Island has been attained. Management actions that would protect the most vulnerable stocks (i.e., steelhead) could also benefit other ESA-listed stocks in the Columbia River Basin.

3. Concerns for the concentration of terns at one site (on East Sand Island).

   Modified Alternative C and Alternative D are the only two alternatives that would reduce the size of the tern colony on East Sand Island, decreasing potential losses from catastrophic events yet still maintaining a substantial Caspian tern colony in the Columbia River estuary. Alternative D, however, provides for some amount of lethal control, potentially negatively affecting the regional tern population. Thus, modified Alternative C is the one alternative evaluated that would both remove the concerns associated with the concentrated colony on East Sand Island and provide for conservation of terns throughout the region. This would be achieved by managing nesting habitat in Oregon and California specifically for Caspian terns and reducing the nesting habitat on East Sand Island to accommodate a smaller number of nesting terns (i.e., 3,125 to 4,375 pairs).

Summary

Alternative A, the status-quo alternative, was not a feasible alternative because it would not meet the purpose of the action as described in the EIS (i.e., reducing resource management conflicts with Columbia River Basin ESA-listed salmonids). Alternative B was not chosen because it also would not fall within the guiding principles identified in the EIS (i.e., "ensure terns remain a viable and integral part of the estuarine" ecosystem, including the Columbia River estuary). Alternative D was not chosen because, although it would reduce tern conflicts with Columbia River Basin ESA-listed salmonids, it would not meet the second purpose of ensuring the conservation of terns in the Pacific Coast/Western region. The Selected Alternative (Alternative C with modifications) provides both the reduction of tern predation on Columbia River Basin ESA-listed salmonids while ensuring the conservation of Caspian terns throughout the Pacific Coast/Western region.

Measures to Minimize Environmental Harm

Chapter 2 of the final EIS describes the public concerns, potential impacts, and measures or stipulations to mitigate those impacts are addressed in the final EIS or biological opinions resulting from ESA consultation. All practicable measures to avoid or minimize environmental impacts that could result from implementation of modified Alternative C have been identified and incorporated into this chapter.

VI. Public Involvement

Public comment has been requested, considered, and incorporated throughout the planning process in numerous ways. Public outreach included public scoping meetings, planning update mailings, a project website, and Federal Register notices.

On April 7, 2003, the Service, in cooperation with NOAA Fisheries and the Corps, published a Notice of Intent (68 FR 16826) in the Federal Register to prepare an EIS for tern management in the Columbia River estuary. The notice also solicited public participation in the scoping process. Four public meetings were held in California, Oregon, and Washington. A total of 116 comment letters were received.

On July 23, 2004, the Service, in cooperation with the Corps and NOAA Fisheries, published a Notice of Availability (69 FR 44053) of the draft EIS and a 60-day public comment period in the Federal Register. Notices were also sent to more than 450 people that were either on our project mailing list or recommended for notification. The notice announced the availability of the draft EIS, listed the opening and closing dates for the comment period, gave locations of three Federal websites and public libraries where copies of the document could be viewed, and provided an option for obtaining hard copies or CDs of the draft EIS. We received 37 comment letters on the draft EIS. All substantive issues raised in the comments on the draft EIS have been addressed through revisions incorporated into the final EIS text or responses contained in Appendix J of the final EIS.

A Notice of Availability (70 FR 02651) of the final EIS was published in the Federal Register on January 14, 2005. We received three comment letters in addition to two brief emails about the final EIS. The comments received on the final EIS did not raise new issues or result in changes to the analysis or to the preferred alternative in the final EIS.

VII. IMPLEMENTATION

Implementation of this decision will not occur sooner than 30 days after the date of the Notice of Availability for the final EIS for *Caspian Tern Management to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary*.

IX. FURTHER INFORMATION

For further information concerning the specific activities authorized under this decision, contact Migratory Birds and Habitat Programs, 911 NE 11th Avenue, Portland, OR, 97232, or phone (503) 231-6164. Copies of the final EIS and ROD are available for viewing and downloading online at http://migratorybirds.pacific.fws.gov/CATE.htm.

Regional Director
Pacific Region
U.S. Fish and Wildlife Service

11/20/06
Date

References

Seto, N., J. Dillon, W.D. Shuford, and T. Zimmerman. 2003. A review of Caspian tern (*Sterna caspia*) nesting habitat: A feasibility assessment of management opportunities in the U.S. Fish and Wildlife Service Pacific Region. U.S. Department of Interior, Fish and Wildlife Service, Portland, OR.

Shuford, W. D. and D. P. Craig. 2002. Status assessment and conservation recommendations for the Caspian tern (*Sterna Caspia*) in North America. Draft report submitted to U.S. Fish and Wildlife Service, Pacific Region, Portland, OR. 152 pages.